APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,563	06/15/2001	Steven M. Bennett	5038-90	9889

7590	06/07/2004

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EXAMINER
NOLAN, DANIEL A

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/882,563	BENNETT ET AL.
	Examiner	Art Unit
	Daniel A. Nolan	2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 March 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-30</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>3-5,27-31,35-37 and 40-46</u> is/are allowed.

6)☒ Claim(s) <u>1,2,6-26,32-34,38 and 39</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>22 March 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
    since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
    37 CFR 1.78.
    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
    reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

Response to Amendment

2.   The filing of 22 March 2004 was entered to the following effect:

-   The title was changed as indicated and the objection is withdrawn as satisfied.

-   The specification was changed as indicated and the objections are withdrawn.

-   The claims were changed as indicated and the objections have been withdrawn.

-   Claims 31-46 were added and all claims were examined on the merits.

Drawings

3.   The proposed replacement drawings were received on 22 March 2004.

These drawings are accepted and the objections are withdrawn as satisfied.

Claim Rejections - 35 USC § 103

4.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art·Unit: 2654

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Kenne *et al*, Hsu *et al* & Guerreri

5.   Claims 1, 2, 6, 7, 9, 10, 13-16, 18, 19, 21, 23, 24 & 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenne *et al* ("Hybrid Language Models and Spontaneous Legal Discourse", 4th International Conference on Spoken Language, October 1996) in view of Hsu *et al* (U.S. Patent 5,677,991 A) and further in view of Guerreri (U.S. Patent 5,189,727 A).

6.   Regarding claims 1, 13, 18 & 23; Kenne *et al* in describing *hybrid language models* reads on the features of the claim *for selecting a recognizer from a number of recognizers* as follows:

- Kenne *et al* (with the "transcripts" input on page 717, section 2, Data – in the right column) reads on the feature of *a) receiving an input stream;*

- Kenne *et al* (with the "perplexity" of the 2nd paragraph from end of left column to the top of the right column) reads on the feature of *b) deriving selection information, where the selection information includes performance-related information;*

- Kerine *et al* (with the "switching" of section 4, Results – in the right column page 718) reads on the feature of *c) using the selection information to select results from at least one enabled recognizer;*

- Kenne *et al* does not mention *applications.* Hsu *et al* (with the invention for flexible speech recognition that selects isolated word speech or continuous speech recognizers) reads on the feature of *d) returning the results to the application* (61 in figure 2). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Hsu *et al* to the device/method of Kenne *et al*, providing a structure to put the strategy for selecting between recognizers into practice.

- With specific regard to claim 18, the *intrusion avoidance* of Hsu *et al* (51 in figure 2) corresponds to and performs the function of the *predictor* of the claim.

With further regard to the feature added to claims $1_{c)}$, $13_{c)}$, $18_{c)}$ and $23_{c)}$, $18_{c)}$, neither Hsu *et al* nor Kenne *et al* mention that *the recognizer is enabled based on expected future performance.* Guerreri, with the invention of a *method and apparatus for language and speaker recognition terms setting pattern recognition preferences* teaches the "future selection" technique that specifically enables the recognizer (column 4 lines 46-54). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Guerreri to the device/method of Hsu *et al* & Kenne *et al* because the objective of selecting one recognizer (over others) is to improve performance.

7.   Regarding claim 2, the claim is set forth with the same limits as claim 1.

Kenne *et al* (lines 8-11 of section 4, Results in right column page 718) teaches the

feature that *causes a recognizer to be selected that is different than the recognizer used*

in a previous interaction (by virtue of the fact that a switch is made *only* if the perplexity

changes, which would occur *only* if the current interaction *differs from previous*

perplexities).

Neither Kenne *et al* nor Guerreri disclose that *selection information is updated;*

Hsu *et al* (lines 57-60) teaches this by setting the *reference score as a baseline* that is

necessary to provide further evaluation. It would have been obvious to a person of

ordinary skill in the art of speech signal processing at the time of the invention to apply

the method and/or teachings of Hsu *et al* to the device/method of Kenne *et al* & Guerreri

as a conventional programming method of preserving prior readings by storing them

elsewhere to avoid their being overlaid by new measurements using the same algorithm

code register fields.

8.   Regarding claims 6 and 24; the claims are set forth with the same limits as

claims 1 and 23, respectively. Kenne *et al* (in the 2nd paragraph of *Section 4, Results –*

right column page 718) reads on the feature that *the enabling information –* and that

consequently *the performance-related information – comprises at least one type of*

information from the group comprises of: channel characteristics, device characteristics,

user information, contextual information, dialog state, recognizer costs and performance

history.

9.   Regarding claims 7 and 14; the claims are set forth with the same limits as claims 1 and 13, respectively. Kenne et al (in the 1st line of page 718) records the classes of people into separate tracks to distinguish lawyers from witnesses, thereby reading on the feature that *deriving the selection information further comprises analyzing the input stream for channel characteristics.*

10.   Regarding claims 9, 15 & 19; the claims are set forth with the same limits as claims 1, 13 & 18 respectively. Kenne et al (with Table 2 and the last paragraph of the right column, both on page 717) distinguishes between *Lawyers* and *Witnesses* (*Statements* & *Questions*), thereby reading on the feature of *receiving contextual information associated with the input stream.*

11.   Regarding claims 10 and 16, the claims are set forth with the same limits as claims 1 and 13, respectively. Kenne et al (with the "switching" of *Section 4, Results* – in the right column page 718) reads on the feature of *receiving recognizer information from the enabled recognizers to be used in the selection information.*

12.   Regarding claim 21, the claim is set forth with the same limits as claim 18. Kenne et al (with the "switching" of section 4, Results – in the right column page 718) reads on the feature that *the predictor is operable to select a recognizer based upon the converted stream.*

13.   Regarding claim 32, the claim is set forth with the same limits as claim 18.

Kenne *et al* & Hsu *et al* do not disclose sources of *contextual information.*

Guerreri teaches that feature where *contextual information comprises information from*

at least one item of information derived from the set of information comprising

information related to the environment around the input stream, characteristics of a user

generating the input stream, information derived from a call using network services,

gender, age, ethnicity, information relating to the user's first (native) language, personal

information about the user, channel characteristics and device characteristics (column 1

lines 19-30).   It would have been obvious to a person of ordinary skill in the art of

speech signal processing at the time of the invention to apply the method/teachings of

Guerreri to the device/method of Kenne *et al* & Hsu *et al* so as to identify speakers'

statements when transcribing conversations.

Kenne *et al*, Hsu *et al*, Guerreri & Waibel *et al*[957]

14.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kenne *et*

al in view of Hsu *et al* and further in view of Guerreri and further in view of Waibel *et*

al[957] (U.S. Patent 5,712,957 A).

15.   Regarding claim 8, the claim is set forth with the same limits as claim 1.

Kenne *et al*, Hsu *et al* & Guerreri do not mention separate input devices so would not

distinguish on that basis. The Waibel *et al*[957] invention of a speech repair and

correctlon method for speech recognition system provides for different inputs (23 & 24

in figure 1) and consequently, using this information, locates error in hypothesis with

highest score from list, generates control signals and second list, combines two lists and

replaces error with hypothesis with highest combined score.

This reads on the feature of *analyzing the input stream for device characteristics*,

which would have made it obvious to a person of ordinary skill in the art of speech

signal processing at the time of the invention to apply the method/teachings of Waibel *et

al*[957] to the device/method of Kenne *et al*, Hsu *et al* & Guerreri to allow the decision to

be influenced by recognition that some devices increase the confidence of recognition

results done on the streams they produce.

Kenne *et al*, Hsu *et al*, Guerreri & Kundu

16.   Claims 11-12, 17 & 25-26 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Kenne *et al* in view of Hsu *et al* and further in view of Guerreri and

further in view of Kundu (U.S. Patent 5,924,066 A).

17.   Regarding claims 11, 17 & 25; the claims are set forth with the same limits as

claims 1, 13 and 23, respectively. Kenne *et al*, Hsu *et al* & Guerreri do not mention

feedback. With the invention for *classifying a speech signal,* Kundu (column 9 lines 49-

54) reads on the feature of *receiving feedback and including the feedback in the

selection information.*

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of <u>Kundu</u> to the device/method of <u>Kenne et al</u>, <u>Hsu et al</u> & <u>Guerreri</u> to simplify training by including learned lessons on the basis of experience rather than attempting to predict all anticipated requirements.

18.   Regarding claims 12 and 26; the claims are set forth with the same limits as claims 11 and 23, respectively. <u>Kenne et al</u>, <u>Hsu et al</u> & <u>Guerreri</u> do not mention *feedback*. <u>Kundu</u> (column 9 lines 50-51) reads on the feature that *feedback is received from one of the group comprised of: off-line analysis, user feedback, and feedback from the recognizer.*

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of <u>Kundu</u> to the device/method of <u>Kenne et al</u>, <u>Hsu et al</u> & <u>Guerreri</u> to adjust for variations in confidence levels corresponding to changes in the input stream over time and with use.

<u>Kenne et al</u>, <u>Hsu et al</u>, <u>Guerreri</u> & Waibel et al'000

19.   Claims 20, 22, 38 & 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Kenne et al</u> in view of <u>Hsu et al</u> and further in view of <u>Guerreri</u> and further in view of <u>Waibel et al'000</u> (U.S. Patent 5,855,000 A).

20.   Regarding claim 20, the claim is set forth with the same limits as claim 18.

Neither Kenne et al, Hsu et al nor Guerreri mention *confidence levels*. Waibel et al[000]

(column 1 lines 55-67) teach the feature that *the recognizers are also operable to*

provide individual-result confidence levels to the predictor. Because the determination

is to be made between recognizers, it would have made it obvious to a person of

ordinary skill in the art of speech signal processing at the time of the invention to apply

the method/teachings of Waibel et al[000] to the device/method of Kenne et al, Hsu et al &

Guerreri in order to select the product of the recognizer providing the highest level of

confidence.

21.   Regarding claim 22, the claim is set forth with the same limits as claim 18.

Kenne et al, Hsu et al & Guerreri all select after recognition. Waibel et al[000] (108 in

figure 3) teaches the feature *to select a recognizer prior to the recognizer receiving the*

input stream (column 7 lines 57-60) which would have made it obvious to a person of

ordinary skill in the art of speech signal processing at the time of the invention to apply

the method/teachings of Waibel et al[000] to the device/method of Kenne et al, Hsu et al &

Guerreri because there is no need to operate recognition when controlling information

would override selection.

22.   Regarding claims 38 & 39; the claims are set forth with the same limits as claims

20 & 23, respectively. Neither Kenne et al, Hsu et al nor Guerreri mention *confidence*

levels. Waibel et al[000] teaches the feature where *the predictor determines, for each*

recognizer in the system and for each situation, a recognizer-based confidence value

(column 1 lines 63-64).   It would have been obvious to a person of ordinary skill in the

art of speech signal processing at the time of the invention to apply the

method/teachings of Waibel *et al*[000] to the device and/or method of Kenne *et al*, Hsu *et*

al or Guerreri for making a preliminary selection by simply examining a confidence

score to avoid the expense of comparing processing results.

Kenne *et al*, Hsu *et al*, Guerreri & Goldberg *et al*

23.   Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kenne *et al* in view of Hsu *et al* and further in view of Guerreri and further in view

of Goldberg et al (U.S. Patent 5,970,446 A).

24.   Regarding claim 33, the claim is set forth with the same limits as claim 32.

Kenne *et al*, Hsu *et al* & Guerreri do not disclose *dynamically* processing contextual

information. Goldberg et al, with the invention for *selective noise/channel/coding*

models and recognizers for automatic speech recognition, teaches the feature where

the contextual information is obtained dynamically (column 5 lines 3-6).   It would have

been obvious to a person of ordinary skill in the art of speech signal processing at the

time of the invention to apply the method/teachings of Goldberg et al to the

device/method of Kenne *et al*, Hsu *et al* & Guerreri to continue to operate despite

changes.

25.   Regarding claim 34, the claim is set forth with the same limits as claim 32.

Kenne *et al*, Hsu *et al* & Guerreri do not disclose *dynamically* processing contextual

information. Goldberg et al teaches the feature where *the contextual information is*

predetermined (column 4 line 58-64). It would have been obvious to a person of

ordinary skill in the art of speech signal processing at the time of the invention to apply

the method and/or teachings of Goldberg et al to the device/method of Kenne *et al*, Hsu

et al & Guerreri to repeat the results of previous processing when conditions recur.

Allowable Subject Matter

26.   Claims 3-5, 27-31, 35-37, 40-46 are allowed.

27.   As allowable subject matter has been indicated, applicant's reply must either

comply with all formal requirements or specifically traverse each requirement not

complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

28.   The following is a statement of reasons for the indication of allowable subject

matter:

-   The present invention is directed to *processing speech using one of several*

    available recognition devices.

-   Claims 3, 4 and 27 identify the uniquely distinct feature that "*the enabling information*

    is used to enable a recognizer based upon its expected future performance".

- The closest prior art of <u>Guerreri</u> and <u>Kenne</u> *et al* teach that *"the enabling information is used to enable a recognizer"* but, where it would be obvious that the motive to enable/select a *recognizer* would be produce an expected performance/result, indications on performance are based on *current* or *past performance* and is not separately considered or derived as *enabling information,* as opposed to merely *selecting information"* as distinguished in the application. Consequently, the prior art of reference fails to anticipate or render the above underlined limitations obvious.

- Claims 5, 28-31, 35-37, 40-46 depend on claims that were allowed.

Conclusion

29.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

30.   Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose

normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, supervisor

Richemond Dorvil can be reached at (703)305-9645.

The fax phone number for Technology Center 2600 is (703)872-9314. Label

informal and draft communications as "DRAFT" or "PROPOSED", & designate formal

communications as "EXPEDITED PROCEDURE". Formal response to this action may

be faxed according to the above instructions,

or mailed to: Mail Stop AF (or CPA, etc. – see Official Gazette, 04 November 2003)
                      P.O. Box 1450
                      Alexandria, VA 22313-1450

or hand-deliver to: Crystal Park 2,
                      2121 Crystal Drive, Arlington, VA,
                      Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to Technology Center 2600 Customer Service Office at

telephone number (703) 306-0377.

                                              Daniel A. Nolan
                                              Examiner
                                              Art Unit 2654

DAN/d
May 25, 2004

                                              RICHEMOND DORVIL
                                              SUPERVISORY PATENT EXAMINER